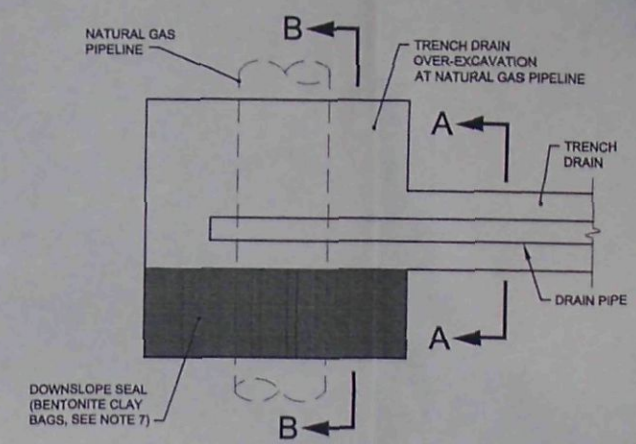


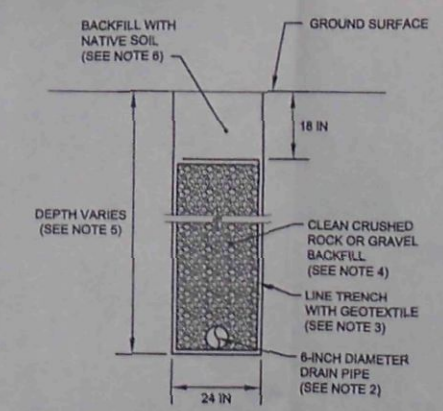
52-30512

NOTES

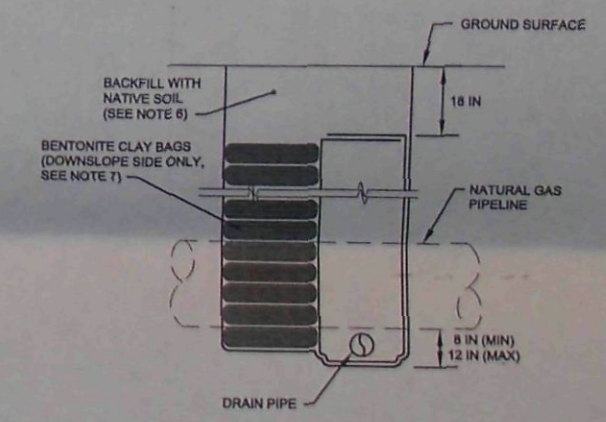
- 1) All trench excavations and backfill shall be performed in a safe manner in accordance with federal, state and local OSHA regulations and guidelines. No personnel shall be allowed in the trench excavation unless it is adequately supported with shoring to prevent wall cave-ins.
- 2) Drain pipe for trench drains shall be 6-inch diameter, perforated, high-density polyethylene (HDPE), Advanced Drainage System (ADS) "Drain Guard" pipe (geotextile-wrapped), or an equivalent approved by PGE. The perforated pipe shall be placed with two rows of perforation holes near the bottom of the trench.
- 3) Geotextile for trench drains shall be Amoco ProPex 4552, Carthage Mills FX-60HS, Miraf 160N, SI Geosolutions Geotex 601, or an equivalent approved by PGE. Any proposed equivalent geotextile shall be a non-woven, needle-punched, polypropylene fabric specifically recommended by the manufacturer for separation, filtration, and drainage purposes. All geotextile joint overlaps along the trench length and the overlap at the top of the rock backfill shall be at least 15 inches. All geotextile laps along the trench length shall be with the upslope section overlapping the downslope section on the inside.
- 4) Crushed quarry rock or gravel backfill for trench drains shall be 1 1/2-inch minus clean, durable rock material with not more than 2 percent (by weight) passing the No. 200 sieve, based on a wet sieve analysis. All materials passing the No. 200 sieve shall be non-plastic. The rock backfill shall be placed in lifts not exceeding 12 inches (loose measure) depth and compacted with the back of a backhoe bucket, or a similar method approved by PGE.
- 5) The depth of the trench drains will vary from zero depth (daylight) at the outlet ends to approximately ten feet maximum depth at the upper end of the drains for Sites A and B, and the majority of the drain length at Site C. Refer to the elevation tables on each profile section for specific trench invert elevations.
- 6) The top 18 inches of each trench drain shall be backfilled with native soil and compacted with three passes of a rubber-tired backhoe, or similar method approved by PGE.
- 7) At the upper end of the trench drains where the drain line intersects the natural gas pipeline (Sites A and B only), bags of bentonite clay shall be placed around the gas pipeline on the downslope side of the trench drain. The bentonite clay is intended to form a seal around the pipe and keep the water collected by the drain from seeping out and flowing along the backfill surrounding the gas pipeline.
- 8) Provide a Type I Concrete Catch Basin (standard type per Washington State Department of Transportation), or an equivalent approved by PGE. Install at outlet end of trench drain at Site B only.



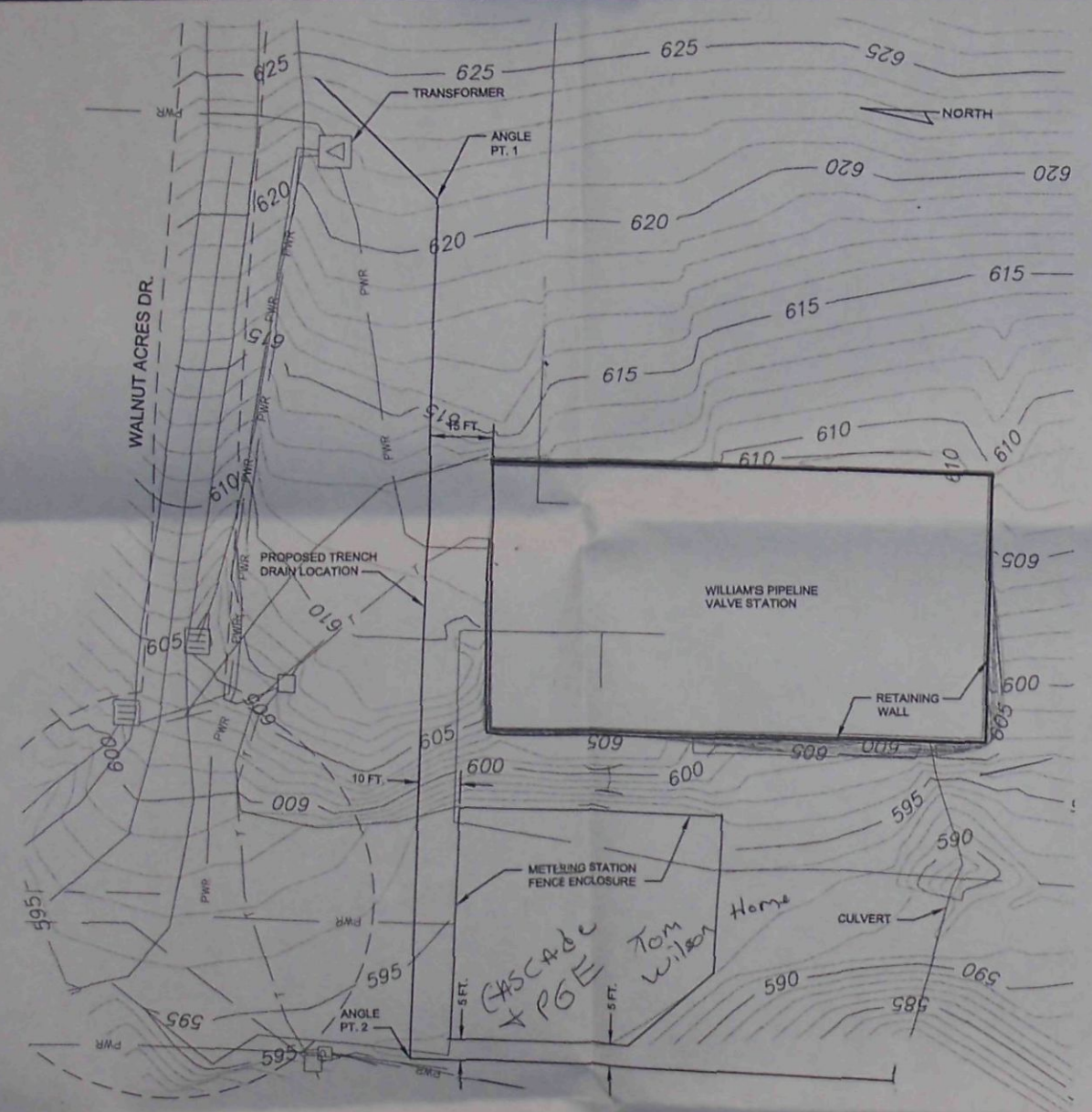
DETAIL PLAN
NO SCALE



SECTION A-A
NO SCALE

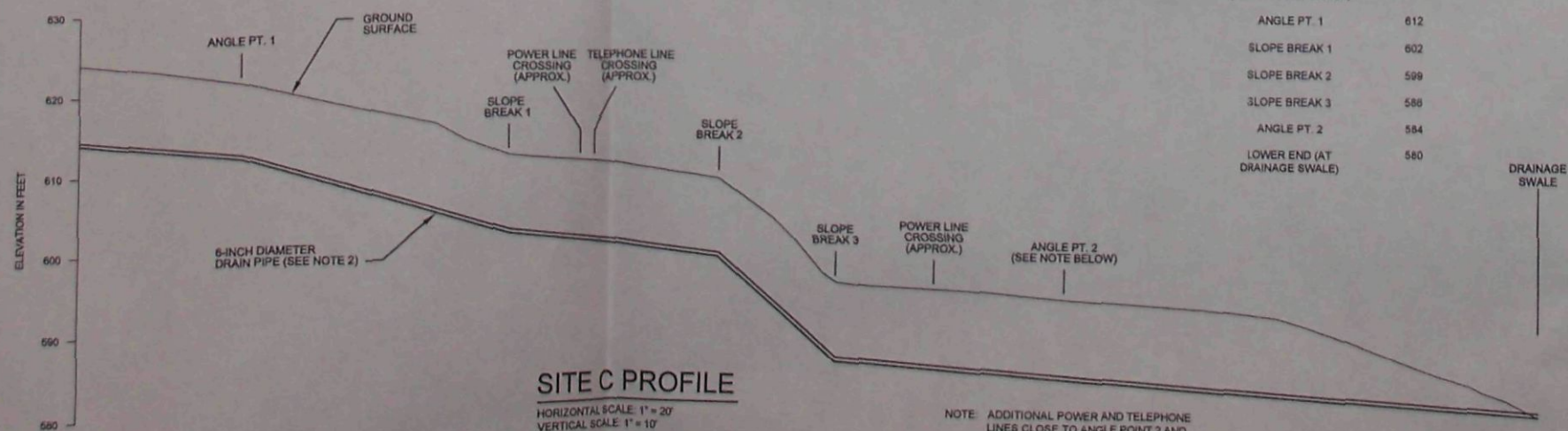


SECTION B-B
NO SCALE



SITE C PLAN
SCALE IN FEET
0 20 40

DRAIN PIPE	
PIPE LOCATION	INVERT ELEV. (FT.)
UPPER END (NEAR TRANSFORMER)	614
ANGLE PT. 1	612
SLOPE BREAK 1	602
SLOPE BREAK 2	599
SLOPE BREAK 3	588
ANGLE PT. 2	584
LOWER END (AT DRAINAGE SWALE)	580



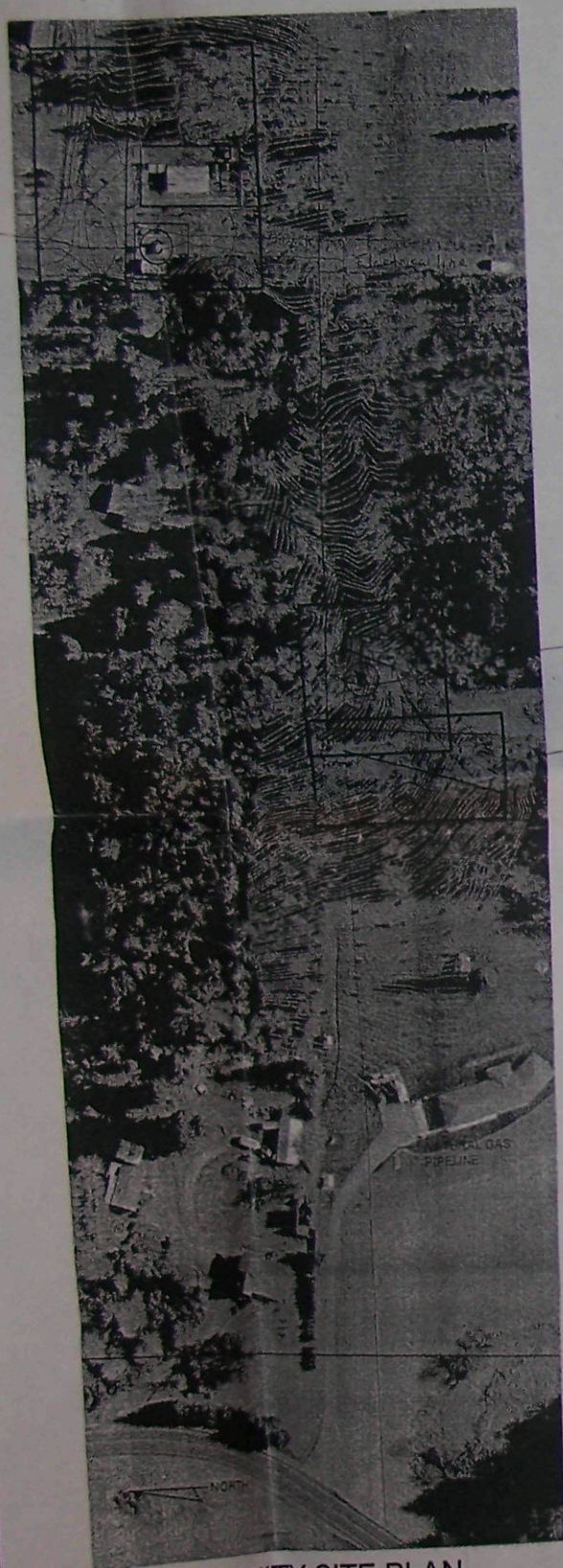
SITE C PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

NOTE: ADDITIONAL POWER AND TELEPHONE LINES CLOSE TO ANGLE POINT 2 AND ADJACENT NORTH-SOUTH DRAIN LINE, SEE SITE PLAN

NOTE: TOPOGRAPHIC CONTOUR INFORMATION PROVIDED BY HAMPSTUR CORPORATION, MAY 8, 2005.

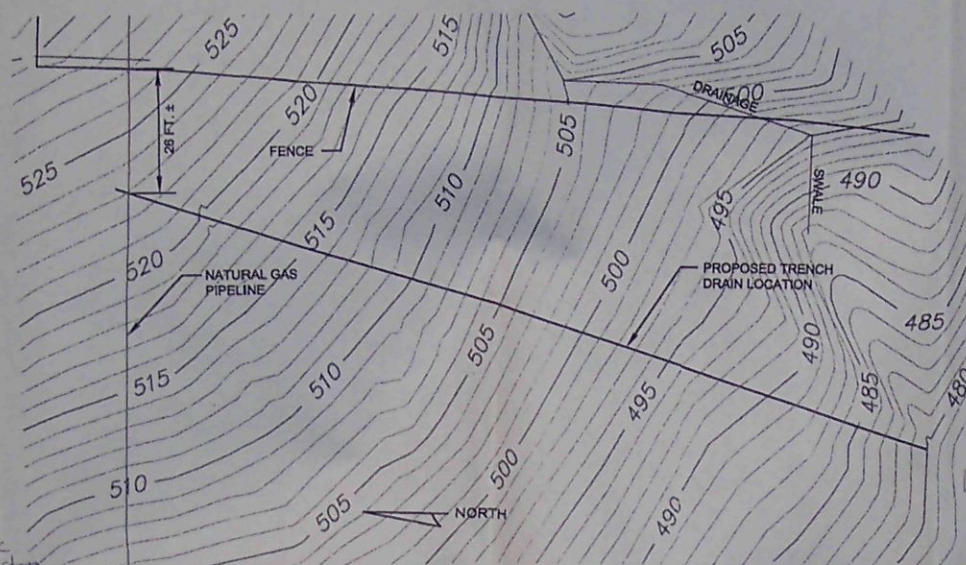
Hampstur - Phil
1123 9166
(Trish)

PGE DRAWING NO. C-35625	NO.	DATE	REVISION
	<p>10200 S.W. Grandview Road, Suite 111 Portland, Oregon 97223 Phone 503-433-1100 Fax 503-432-1328</p>		
DATE JUL 2005	PROJ 1673	<p>TITLE PLANS, PROFILES, DETAILS, AND NOTES</p>	
<p>JOB KB GAS PIPELINE TRENCH DRAINS OSTRANDER, WASHINGTON</p>		<p>SHEET 2/</p>	



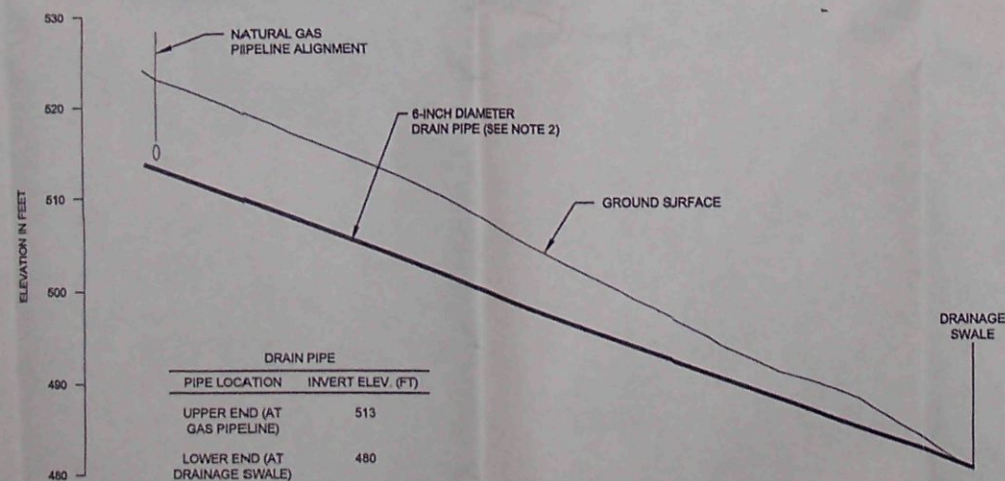
VICINITY SITE PLAN
SCALE IN FEET
0 100 200

NOTE: TOPOGRAPHIC CONTOUR INFORMATION PROVIDED BY
HAMPSTUR CORPORATION MAY 8, 2005.



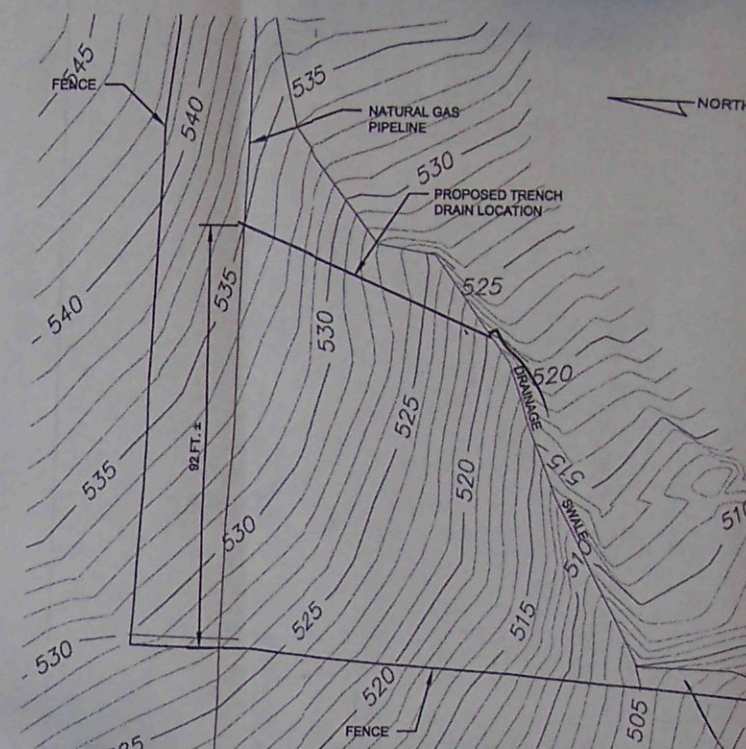
SITE A PLAN

SCALE IN FEET
0 20 40



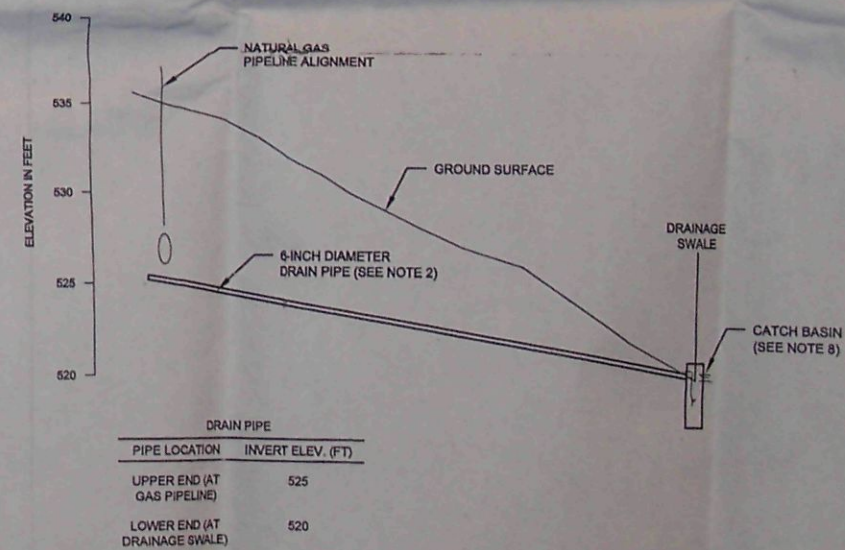
SITE A PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



SITE B PLAN

SCALE IN FEET
0 20 40



SITE B PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

52-30512

PGE DRAWING NO. C-35825		NO.		DATE		REVISION		1673.01 MWT	
				CORNFORTH CONSULTANTS 10250 S.W. Greenburg Road, Suite 111 Portland, Oregon 97223 Phone 503-452-7100 Fax 503-452-1528		PLANS AND PROFILES		DES RJH DRN MWT CHK RJH APPV MRM	
DATE JUL 2005		PROJ 1673		JOB KB GAS PIPELINE TRENCH DRAINS OSTRANDER, WASHINGTON		SHEET 1/2			